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ABSTRACT

The role of invention in contemporary rhetorical theory poses two problems: how to deal systematically with both the general topics and the more specific topics that respect the different modes of knowledge, and how to incorporate these topics into a conceptual framework that includes other elements of discourse for which theories or partial theories exist. The epistemology of Michael Polanyi offers three main concepts that suggest solutions for these problems: tacit inference provides epistemological grounds for adopting the informal procedures needed to treat a variety of subject matters; focal awareness applies to the interdependence of general and specific topics at two stages of the inventional process; and marginal control, an hierarchical principle, permits the accommodation of substantive and linguistic elements in a single framework. Such a framework based on Polanyian principles contains two major parts, one called "speaker, during the process of invention," the second called "audience, projected by speaker for the purpose of rhetorical invention." Tacit inference leads to a pattern of coherence for the speaker where meaning is linked with communicated material and relates to the audience through the topic, methods of argument, style, and linguistic elements that result in communication. (MAI)

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Polanyi's 'Tacit Knowledge' and the Problem of Invention

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Scholars have long regarded Michael Polanyi as an able critic of the ideal of scientific detachment and as an equally able proponent of an alternative model for the discovery of knowledge, a model that recognizes the active participation of the knower. In the past decade it has become evident that Polanyi's epistemology offers insight into not only the philosophy of science but aesthetics, theology, historiography, and the theory of rhetoric. Watson (1973) analyzes the implications of Polanyi's work for a re-evaluation of rhetorical thought, past and present. My goal is more limited. I shall examine three central Polanyian concepts--tacit inference, the relationships between subsidiary and focal awareness, and marginal control--which exemplify epistemological principles that cast new light on some of the unresolved problems of invention.

That invention is vital to rhetoric has never been in dispute. Phaedrus's student in Zen and the Art of Motorcycle Maintenance mutely testifies to that fact when she finds herself unable to write, despite knowing the rules of composition, until she discovers a starting point: the upper left-hand brick on the facade of the opera house in Bozeman, Montana. In a less humble way,

the Ramists testified to it when they shrewdly pre-empted invention for their own field of logic. Substance, in short, is crucial. It is the mainspring that sets the techniques of rhetoric in motion, a view held by major theorists since classical times despite their differing interpretations of the nature of invention, e.g. the finding of first principles, or the finding of sound content in general, or the finding of evidence for a given position in the various schemes of topics. (The complicated history of invention is surveyed in Harrington, 1948.)

The role of invention in contemporary theory becomes problematic, however, when the scope of rhetoric is extended beyond judicial, deliberative, and epideictic discourse, an expansion that seems necessary if rhetoric is to remain a useful organon. (For the purpose of this discussion, I shall define the domain of rhetoric as any non-spontaneous discourse over which the speaker exercises creative control, a variant of Wilkerson, 1970.)¹ Two problems, in particular, have resisted satisfactory solution: 1) How to devise topics that are specific enough to respect the integrity of different modes of knowledge and yet sufficiently unified to include them in a single art; and

2) How to incorporate the topics into a coherent framework that includes other elements of discourse (phonetics, grammar, style) for which theories or partial theories exist and which constitute a different order of inquiry, i.e. linguistic knowledge vs. substantive knowledge.

Although these two problems are distinct, they share a common difficulty that will emerge as we reflect on the issues involved. Invention requires one to deal with substance, and dealing with substance requires some specialized knowledge of the subject matter to which general topics can be applied. Despite the stricture of Aristotle (1960:I.a.1358a) against venturing too far into specialized fields, he nonetheless acknowledges the necessity of specific knowledge: '... enthymemes are mostly formed from these particular and special topoi; not so many come from the universal topoi.' Even the fertile set of topics proposed by Perelman (1969:83-99) for value or choice--quantity, quality, order, the existing, essence, and the person--is limited by its generality. And Pike's tagmemic topics--particle, wave, and field--especially attractive because of their applicability to linguistic phenomena as well as other knowledge (Young and Becker 1967:92-93),

also operate at too general a level to be useful without a set of accompanying specific topics. An adequate theory of invention seems to require both invariant, field-independent topics--few in number, widely applicable, and relatively stable--and variable field-dependent ones--comprising multiple sets of categories that can vary to reflect the principles and discovery procedures of different disciplines and that can change as the disciplines change. But, can one treat both kinds of topics systematically? This question poses an issue of some importance in the construction of a theory.

The issue is especially perplexing because knowledge of the world is dynamic in a different way from that of language. The potential number of linguistic utterances may increase exponentially to infinity, but the infinite ends rest on finite means; and duality of patterning makes possible the use of a method to predict what form future utterances might take. By contrast, no finite means have been identified in substantive knowledge, no combinatory principle has been found, and no generative theory has been devised. One must instead rely on classification. But, since the meaning of facts, concepts, and theories changes with the discovery of new ones, which, in turn, lead to the discovery of still newer ones, the attempt to construct a definitive taxonomy produces a

Shandean paradox in which knowledge multiplies and changes faster than it can be accounted for.

This observation can be confirmed by recalling John Wilkins's ambitious table of entities in An Essay Towards a Real Character and a Philosophical Language (1668), a work that influenced Roget's Thesaurus two centuries later.² The table, which purports to catalogue exhaustively all entities and concepts, requires 265 folio pages to unfold an Aristotelian scheme of classification in which all things are divided into forty genera, each of which is then subdivided into six differences, with each difference further subdivided into approximately nine species. So sweeping at one end that it contains four categories more general than God (who appears only as the fifth genus), and so specific at the other that it distinguishes various leaves and flowers, the table is marred by anomalies, inconsistencies, and lacunae caused by changes in knowledge which occurred even before the work was finished. The errors could not be remedied, however, without overhauling the entire plan because Wilkins forced everything into one formal scheme: facts that quickly become obsolete, categories that remain stable for a long period of time, and those that need to be revised frequently to accommodate new information.

The common difficulty shared by the two problems of invention now becomes clear. Substantive knowledge, unlike linguistic knowledge, resists formalized procedures. And as substantive knowledge becomes more specialized, it resists even highly formal methods of classification. The possibility of solving the two problems therefore hinges on the answer to a key question: Can an informal way be found to deal systematically with both field-independent and field-dependent topics without doing violence to formalized linguistic elements, which ideally should appear in the same conceptual framework? We shall hold this question in abeyance while we consider Polanyi's epistemology, which indirectly suggests some answers.

Polanyi, like Perelman, challenges the pervasive attitude that would limit rational thought to the entailment of logical deduction or to induction based on experimental evidence. Perelman (1969:3) argues, 'It is the idea of self-evidence as characteristic of reason, which we must assail, if we are to make a place for a theory of argumentation that will acknowledge the use of reason in directing our own actions and influencing those of others.' Polanyi goes further. Whereas Perelman resists the encroachment of positivism on areas of knowledge where its tenets are

inappropriate, Polanyi (1975:61) assails the idea of self-evidence itself: '... all our knowledge is inescapably indeterminate.' The truth of even a deductive conclusion, as opposed to its validity, rests on an empirical correspondence with reality, and there is nothing in empirical knowledge that points necessarily to any such correspondence. The consequence, for Polanyi, is not pyrrhonism. It is an epistemology that rests on tacit knowledge.

We are now ready to examine his concepts that bear on the problems of invention I have delineated. Polanyi (1975:39-40) distinguishes two complementary processes--explicit inference and tacit inference--by which one arrives at knowledge, indeterminate though that knowledge ultimately may be. Explicit inference is based on the specifiable evidence and method whereby one explains, to himself and others, a conclusion that has been drawn, and it is reversible in the sense that the path can be retraced. Tacit inference is an irreversible process based on evidence in the subsidiary awareness, or context, that is a *sine qua non* for knowing anything at all; and this evidence is unspecifiable while it is used, not because it cannot be found but because it cannot be focused upon during the process of tacitly inferring. The attention is fixed

instead upon the focal object, which acquires meaning in the context of elements in subsidiary awareness.

Of the two processes, tacit inference is clearly the more important in Polanyi's epistemology because it makes meaning possible. In The Tacit Dimension (1967:20) he observes that '... the process of formalizing all knowledge to the exclusion of any tacit knowing is self-defeating.' For example, in order to formalize the characteristics of even a simple entity, whether it be a frog or a sentence, the entity must first be identified through an informal process. In Meaning (1975:61), he makes a stronger claim: 'All knowledge is ... either tacit or rooted in tacit knowing.' The concept of tacit knowing bears some resemblance to the gestalt principle of recognizing a whole without being able to specify its parts, but there are essential differences that give the concept its unique characteristics. 1) Polanyi does not limit tacit knowing to perception; he extends it to both theoretical and practical knowledge as well as the 'knowing how' of motor skills. 2) Tacit knowing is not passive; it functions in the discovery of knowledge as well as in its recognition. 3) Tacit knowing is not synonymous with intuition; it always begins with particulars, which function like clues. These particulars, moreover,

are not necessarily identical with empirical data from which one draws a generalization; in testing a theory or applying it, the theory itself becomes the particular that is interiorized, the element of subsidiary awareness. For instance, as one learns the Fibonacci sequence--1, 1, 2, 3, 5, 8, 13, 21, etc.--the numbers of which it is composed form the particular of subsidiary awareness, and its pattern is the focal object; whereas while one tests the applicability of the sequence, the pattern itself becomes the subsidiary element through which, like a pair of spectacles, one examines the focal object, e.g. plant growth, or the numerous other phenomena to which the Fibonacci sequence applies.

The relationships between subsidiary and focal awareness--the functional, the phenomenal, and the semantic--collectively form the second Polanyian concept that we shall consider.³ They are especially germane to the problem of invention because they establish connections between categories of thought in the two components of tacit inference. The functional relationship implies a pragmatic bond in which the subsidiary categories resemble mathematical variables whose values, assumed for the occasion, are necessary to interpret the focal object. The phenomenal implies a transitive bond: the subsidiary categories do not disappear in the process

of tacit inference; they reappear, though somewhat transformed, in the meaning of the focal object. Finally, the semantic implies a heuristic bond between categories of thought in the two components; those in subsidiary awareness confer new significance on those of the focal object.⁴

It will be noticed that these relationships emphasize both the purpose and the form of tacit inference. This emphasis also appears in the third concept, Polanyi's principle of marginal control, defined as 'the control exercised by the organizational principle of a higher level on the particulars forming its lower level' (Polanyi 1967:40). The principle reflects Polanyi's contention that a wide range of objects, processes, and activities must be viewed hierarchically if one is to account for their function (or purpose) and not merely their structure. The rules of chess, for instance, can be specified in terms of permitted moves; but the strategy of chess, though dependent on permitted moves, cannot be explained solely in terms of them and requires, therefore, a different level of explanation. Although Polanyi (1958) advances the principle of marginal control initially to demonstrate the falsifying effect of mechanistic reductionism in scientific explanations, in later works (1967, 1975) he emphasizes that this organic principle

also applies to other fields of knowledge: poetry, art, ritual, myth, and language. In the case of language, each level of discourse, he says, is organized according to its own rules (phonetics, lexicography, grammar, stylistics, literary criticism), and these levels form a hierarchy in which the rules of each level are governed by the principles of the next higher level. (Polanyi 1967:35-36.)

This brief discussion of Polanyi's central ideas provides suggestions for framing an answer to the question that we have been holding in abeyance: Can an informal way be found to deal systematically with both field-independent and field-dependent topics without doing violence to formalized linguistic elements, which ideally should appear in the same conceptual framework?

First, Polanyi's epistemology with its feature of tacit inference, an imaginative process common to discovery in all fields and one that pervades all knowing, moots the issue of the intellectual respectability of informal procedures because they turn out to be, ultimately, inescapable. Second, the functional, phenomenal, and semantic relationships between subsidiary and focal awareness describe, *mutatis mutandis*, the interdependence of general and specific topics at two stages of the inventional process: the speaker's

invention of material and his devising of a strategy to communicate the material effectively. At each stage, the nature of these relationships permits the general and specific topics to be treated separately, thus avoiding the paradox faced by Wilkins. Third, the principle of marginal control justifies an inclusive framework composed of all the constituents of discourse, which could range in a hierarchy from phonetics to adherence (or belief) because linguistic knowledge, though different in form from substantive knowledge, is subject to the same kind of emergent meaning that informs other ways of knowing.

What might such a framework based on Polanyian principles include? Let us consider a model that contains two major parts: one called 'Speaker, during the process of invention', the second called 'Audience, projected by speaker for the purpose of rhetorical invention'. (I shall use speaker to mean either speaker or writer.) Although the second part of the model is our main concern, it has certain characteristics that can best be explained in the context of what the speaker does during the process of invention. For example, both parts include components of subsidiary awareness and focus, linked by tacit inference, to account for the similar process that occurs in speaker and audience as they

draw conclusions, make discoveries, or arrive at meanings. Yet, the tacit inference in each case is based on different evidence and functions in a different way. For the speaker during the process of invention, tacit inference leads to the coherence of a pattern based on particulars in his subsidiary awareness that can be designated as topics of subject matter, with field-dependent ones leading to field-independent ones (or vice versa) in the focus. For his projected audience, on the other hand, the tacit inference leads ideally to adherence to the speaker's meaning, and it is based on communicated material. The subsidiary awareness of the audience, therefore, should include a sub-component of explicit inference, i.e. an item containing the evidence marshalled by the speaker to explain the meaning he himself has reached by tacit inference. This sub-component of explicit inference comprises all those ingredients used by the speaker to convince the hypothetical audience he has constructed: topics of presentation, methods of argument, and style together with the linguistic elements of which it is composed--in all of which the selection is influenced partly by subject matter, partly by attributes of the postulated audience. These ingredients of explicit inference then become particulars of subsidiary awareness for the audience, which uses them, by way

of a subsequent tacit inference, to understand the speaker's meaning, its focal object.

This sketchy model, intended only as an example, probably could be made more precise; but even if the imprecision should turn out to be inherent in the subject and not contingent on my interpretation, Polanyi's epistemology provides a strong stimulus to further investigation. That it might not enable one to construct a rigorously formal theory of rhetoric is not a fatal flaw. Polanyi (1958, 1967, 1975) discriminates three characteristics that validate a scientific discovery: exactitude of measurement, systematic importance, and intrinsic human interest. Because of differences in the disciplines, he says, not every discovery need manifest the three characteristics in equal proportions to be acceptable. Given the systematic importance of invention to a vital theory of rhetoric, the significance of a vital theory of rhetoric to human culture, and, of course, the informal nature of rhetoric itself, we might well heed the admonition of Aristotle (1962:I. 3.1094b): '... it is the mark of an educated mind to expect that amount of exactness in each kind which the nature of the particular subject admits.'

Notes

¹Wilkerson (p. 90) argues, rightly, I think, that spontaneous utterances should be excluded because rhetoric as an art implies forethought and planning. But he also excludes conventional utterances and emphasizes that 'rhetorical activity is not identified with the speaker's control over what is said' (p. 90). This view stems from his stress on the high rhetorical interest of 'nonobligatory message features', a stress which comes, in turn, from his concern for a rhetorical theory that can mesh with information theory. He thus attaches little rhetorical interest to scientific discourse on the grounds that the scientist is constrained by his conventional situation 'to establish an isomorphic relationship between what is said and that which it is said about' (p. 91). Although I disagree with his notions that language can be isomorphic with reality and that scientific discourse is so restricted by conventions that it has low rhetorical interest, his argument for the establishment of natural boundaries on rhetoric is persuasive.

²Wilkins, of course, was not a rhetorician but a language reformer whose goal was to foster clear communication by ridding the language of ambiguity. To this end, he drew up what he believed to be his exhaustive catalogue of entities, each of which was to be represented by one and only one symbol, which was to stand for one and only one entity, thus providing a language in which everything could be clearly stated without the intervention of the judgment, or misjudgment, of the speaker.

³Polanyi (1976:13) mentions a fourth relationship, the ontological, which 'tells us what tacit knowing is a knowledge of.' Since the ontological relationship is vaguer than the other three and is not symmetrical with them, and since Polanyi (1975) omits it from his later discussion of the relationships, I do not consider it here.

⁴Although in The Tacit Dimension Polanyi uses semantic loosely to refer to any meaning whatsoever, in Meaning (1975:74) he restricts its use to 'artificial meanings', i.e. those contrived by man, a restriction that makes it more useful in rhetorical matters.

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